

Influence of the estrous cycle on the norepinephrine-induced contraction of rat aorta: Relationship to vascular prostanoids biosynthesis

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Since ovarian sex steroids (estradiol and progesterone) may affect both blood pressure and prostanoids synthesis, and because prostaglandin-E2 (PGE2) and prostacyclin (PGI2) can modulate the vascular action of pressor hormones, we investigated the vascular reactivity to norepinephrine during the estrous cycle of the rat. In addition, we determined the vascular biosynthesis of PGE2 and 6-keto-PGF(1?) (the stable metabolite of PGI2) at different stages of the estrous cycle.

Cumulative dose-response curves were obtained by a stepwise increase in the concentration of norepinephrine. The contraction of thoracic aortic rings induced by norepinephrine did not change significantly between estrus, metestrus and diestrus. However, aortic rings obtained on proestrus showed a significant reduction in the maximal contraction (E(max)) induced by norepinephrine ($p < 0.001$). In addition, we found significant increases in vascular synthesis of PGE2 and PGI2 on proestrus ($p < 0.001$). These results indic